What is claimed is:

1. A capacitor, comprising:

a first plate;

a second plate;

a number of dielectric grains between the first plate and the second plate wherein at least a portion of the grains include:

an outer shell that is doped with a first dopant species; and

an inner core that is doped with a second dopant species.

2. The capacitor of claim 1, further including a number of intermediate plates between the first plate and the second plate, the intermediate plates being separated from the first and second plate by layers of the number of dielectric grains.

3. The capacitor of claim 1, wherein the first dopant species includes a donor dopant species.

4. The capacitor of claim 1, wherein the first dopant species includes a species chosen from the group consisting of lanthanum, actinium, niobium, and tantalum.

5. The capacitor of claim 1, wherein the second dopant species includes an acceptor dopant species.

6. The capacitor of claim 1, wherein the second dopant species includes a species chosen from the group consisting of iron, calcium, scandium, neodymium, nickel, magnesium, and gadolinium.

7. The capacitor of claim 1, wherein the dielectric grains include ceramic grains.

8. The capacitor of claim 7, wherein the ceramic grains include barium titanate ($BaTiO_3$).

9. A capacitor, comprising:

a first plate;

a second plate;

a mixture of dielectric grains between the first plate and the second plate, including:

a first number of dielectric grains wherein at least a portion of the first number of dielectric grains include:

an outer shell that is doped with a first dopant species;

an inner core that is doped with a second dopant species; and

a second number of dielectric grains having an outer shell that is doped with a third dopant species and an undoped core.

10. The capacitor of claim 9, further including a number of intermediate plates between the first plate and the second plate, the intermediate plates being separated from the first and second plate by layers of the mixture of dielectric grains.

11. The capacitor of claim 9, wherein the first dopant species is the same as the third dopant species.

12. The capacitor of claim 9, wherein the first dopant species includes a donor dopant species.

13. The capacitor of claim 9, wherein the second dopant species includes an acceptor dopant species.

14. A capacitor, comprising:

a plurality of conducting plates;

a number of dielectric grains separating the plurality of plates wherein at least a portion of the grains include:

an outer shell that is doped with a first dopant species; and

an inner core that is doped with a second dopant species.

15. The capacitor of claim 14, wherein the first dopant species includes a donor species.

16. The capacitor of claim 14, wherein the second dopant species includes an acceptor species.

17. The capacitor of claim 14, wherein the wherein at least a portion of the number of dielectric grains include undoped cores.

18. An information handling system, comprising:

a number of circuits, including:

a processor circuit;

a dynamic random access memory circuit;

a bus coupled between the processor circuit and the dynamic random access memory circuit;

a power delivery system coupled to the number of circuits;

a capacitor coupled between the power delivery system and the number of circuits, including;

a first plate;

a second plate;

a number of dielectric grains between the first plate and the second plate wherein at least a portion of the grains include:

an outer shell that is doped with a first dopant species; and

an inner core that is doped with a second dopant species.

19. The information handling system of claim 18, wherein the dynamic random access memory circuit includes a rambus dynamic random access memory circuit.

20. The information handling system of claim 18, wherein the first dopant species includes a donor dopant species.

21. The information handling system of claim 18, wherein the second dopant species includes an acceptor dopant species.

22. A method of forming a capacitor, comprising:

forming a number of dielectric grains;

doping at least a portion of the dielectric grain cores with a first dopant species;

doping at least a portion of the outer shells of the dielectric grains with a second dopant species;

bonding the dielectric grains to form a dielectric layer;

coupling a first conducting plate on a first side of the dielectric layer; and

coupling a second conducting plate on a second side of the dielectric layer.

23. The method of claim 22, wherein bonding the dielectric grains includes sintering the dielectric grains.

24. The method of claim 22, wherein doping at least a portion of the dielectric grain cores with a first dopant species includes doping at least a portion of the dielectric grain cores with a donor dopant species.

25. The method of claim 22, wherein doping at least a portion of the outer shells of the dielectric grains with a second dopant species includes doping at least a portion of the outer shells of the dielectric grains with an acceptor dopant species.

26. The method of claim 22, further including selecting a fraction of doped core grains and a fraction of undoped core grains to adjust a lossiness property in the capacitor.

27. The method of claim 22, further including coupling a number of layers of alternating conducting plates and dielectric layers to the second conducting plate.